Chez Pierre

Presents ...

Monday, February 17, 2026
12:00 pm - 1:00 pm
Duboc room – 4-331

Special Chez Pierre Seminar

Carolyn Zhang, Harvard University

“ Family trees for fractional quantum Hall states”

Abstract: The fractional quantum Hall (FQH) effect arises in two-dimensional electron systems in strong magnetic fields and leads to exotic phases of matter with emergent quasiparticles known as anyons. These anyons carry fractional electric charge and exhibit braiding properties that go beyond those of bosons and fermions, allowing them to form building blocks for robust quantum codes. However, key features like their braiding properties are notoriously difficult to observe directly in experiments. One approach to gaining insight into a given FQH state — the "parent" — is to study its relationship to nearby "child" states that emerge when the magnetic field is slightly tuned. In this talk, we will present a new and more general framework for constructing FQH families, which can be applied even when previous methods cannot.